EM Network - Procedural Sedation and Analgesia Logic Model

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Situation:
Currently the time to analgesia in ED is excessively long. Prehospital ability to provide analgesia is very limited. The best management for ED sedation is not clear.

Overall Goals:
Safe, effective, timely, efficient, equitable and patient-centred ED procedural sedation and analgesia

Stakeholders:
- Health Authorities
- Lions Gate Hospital
- VCHRI
- The North Shore Health Research Foundation
- Harvard Children's Hospital
- MIT
- Several US & European sites
- UBC DEM Members

Priority Goals:
Disseminating procedural sedation best practices on EM Network. Start controlled trial using intranasal ketamine in BCEHS. Implement rapid analgesia protocol in LGH ED

Inputs	Activities	Outputs	Outcomes		
			Short Term (<1 yr)	Long Term (2-3yrs)	Overall Impact
Literature review of procedural sedation practices/outcomes; consultations with VCH and BC Patient Safety & Quality Council	Collaboration on Clinical Practice Guideline developed for VCH Region	Review and update of Clinical Practice Guidelines and instruction for UBC EM residents	Access to best practices guidelines in all BC ED's via EM Network website	Measure reach and engagement of best practices guidelines on EM Network	Adaption of best practices for provision of ED procedural sedation & analgesia that improve patient comfort, safety, ED flow and efficiency
Procedural sedation monitoring collaboration with Harvard Children's Hospital, MIT and other centers in the US and Europe. Investigating novel patient monitoring strategies to predict adverse events	Clinical comparison trials for effects on breathing, adverse effects and patient comfort; physical and chemical compatibility studies	Publish draft of EM Network Best Practices guidelines for procedural sedation	Present new guidelines at provincial conferences	Subjective opinion survey of BC EP's on use of PSA guidelines	Improved patient comfort and clinical humane care by provision of analgesics in the pre-hospital setting
Early analgesia initiative literature review and identified time to analgesia delivery; stakeholder meetings	Design, develop and refine techniques, medication regimens, and monitoring strategies to improve provision of ED procedural sedation and analgesia; analysis and publication of findings	Procedural sedation monitoring findings taught to residents, presented at provincial, national and international conferences	Investigate new technologies for monitoring procedural sedation	Intranasal ketamine delivery by EHS province-wide becomes treatment guideline	Shorter times to analgesics in ED; change in provincial practice
Clinical trial of intranasal ketamine	Pre-hospital Intranasal ketamine study completed; integrated with EHS in the field	Publish LGH early analgesia trial	Institutionalized clinical practice change for intranasal ketamine delivery by EHS in test sites	Reduced time to analgesia delivery in test hospital, then broadly	
Design trial evaluating IM ketamine for rapid control of agitation	In-hospital Intranasal ketamine study completed	Implement and publish intranasal ketamine clinical trials	Shorter time to analgesia after early analgesia protocol enacted	New trials of analgesic agents - intranasal and IV ketamine combined with sedatives	
Rapid Agitation Control Study	ED Analgesics Initiative launched	Procedural sedation monitoring collaboration with Harvard, MIT and international centres	A clinical trial of intranasal ketamine in prehospital setting - compare time to analgesia		
	Founding member of the International Committee for the Advancement of Procedural Sedation, March 2015	Article published on IV and intranasal ketamine for procedural sedation, informing best practice guidelines	Document baseline data for time to analgesia in EDs		

Significant Challenges:
Communication barriers: provincial approvals for prehospital analgesic use; funding deficiencies.